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Sabra M. Kimball

Virginia Wildlife

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**Dedicated to the Conservation of
Virginia's Wildlife and Related Natural Resources
and to the Betterment of
Outdoor Recreation in Virginia**



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Observations, conclusions and opinions expressed in *Virginia Wildlife* are those of the authors and do not necessarily reflect those of the members or staff of the Commission of Game and Inland Fisheries.

COVER: Orchard oriole in cherry tree, by Sabra M. Kimball of Melfa.

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Code of Ethics for Outdoorsmen

MEETING in Clearwater, Florida, the American Outdoorsman Conference, a national group of fifty-four national associations and government agencies concerned with outdoor recreation, has adopted a six-part code of ethics for the outdoorsman. The single key word in this guide to man's relationship to his outdoor environment is "respect."

The code, written by Warren Page, president of the National Shooting Sports Foundation, is not limited to hunters but applies as well to hikers, skiers, fishermen, snowmobilers, campers, and all the other manifold forms of outdoor recreationist. It was adopted by unanimous vote during the four-day Florida convention.

Under the code, America's outdoorsmen, numbering 50 to 100 million, will pay proper respect to the rights of property and privacy, to both the laws and the sporting usages guiding outdoor activities, to wildlife and to the conservation of its habitat, to the environment, to the young or uninitiated who need training in proper outdoor conduct, and to themselves as lovers of the out-of-doors.

The full text of the new ethical code follows:

1. As outdoorsmen we will respect the full due of all others in matters of their normal social rights and privileges, their privacy, and their property.
2. As outdoorsmen we will respect the rules of safety applicable to our sport, and will furthermore most highly respect both the laws written to prescribe its legal pursuit and those usages, written or unwritten, which, like the ethic of fair chase in hunting, guide its proper and sportsmanlike conduct.
3. As outdoorsmen we will fully respect any quarry or wild thing sought, according to it not only suitable opportunity for escape but also and more importantly our constant consideration for the maintenance of its healthy habitat.
4. As outdoorsmen we will respect our worldly environment, befouling it in no preventable way and persistently seeking to maintain or improve its established ecology.
5. As outdoorsmen we will respect the need for such ethical conduct among the young or the uninitiated and will endeavor to pass on to others all the skills, attitudes, and knowledge essential to the true man of the out-of-doors.
6. Above all, we will respect ourselves as outdoorsmen, recognizing that in natural pursuits we find understanding of man's origins, in contact with nature we find refreshment of the spirit, and through a love for the out-of-doors we build restoration of self.

—Gary Sitton
National Shooting Sports Foundation

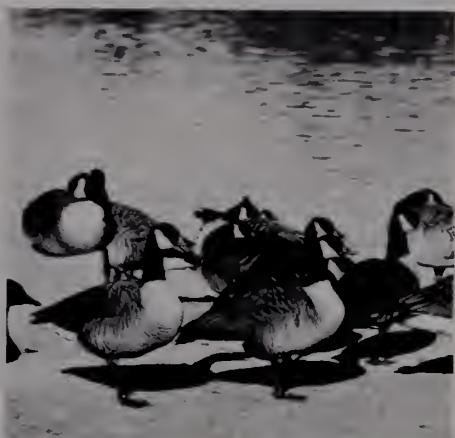
Why Does a Duck . . . ?

WE have read your April issue and several articles proved very interesting.

Here in Florida I work for an industrial waste treatment plant, a new type that belongs to the Navy. This past fall we were able to observe birds of all kinds, and ducks that settled on our ponds. We also have 20-30 tame mallards, and how they and the wild ducks kept apart and ignored each other was interesting to watch.

There is one thing we have not figured out. The ducks, when resting or sleeping, all stand on one leg, and usually the same one, too. If one duck suddenly tucks one leg up, one by one or sometimes all at once almost all the rest will follow suit. Now, why??

M. C. Wood
Pensacola



Commission photo by Harrison

We can't explain why, but we have the photograph above to prove that geese do it too.—Ed.

Is Photographer Rue Still Alive?

YOU have, beyond any question of a doubt, one of the finest publications on wildlife. However, in your March issue on page eleven, lower right-hand corner, there is a picture of photographer Leonard Rue as he examines a pair of grouse. Is that gentleman still alive? The gun is aimed right at his heart! The dog could have jumped out of Mr. Rue's lap and you folks would have had a dead photographer.

If this gentleman keeps up this kind of safety with firearms, he will not be with us for long.

Ralph Tentcher
Minong, Wisconsin

Mr. Tentcher evidently is catching up on his back reading. The photograph to which he refers appears in the March 1972 issue of Virginia Wildlife. In any event, Mr. Rue survived. He is a well-known free lance wildlife photographer, and not a member of the Virginia Wildlife staff, but we would still hate to lose him. Would you believe that he had quit hunting and unloaded his gun before posing to take his own photograph?—Ed.

Chickahominy's

Brawling Bass

By PETE ELKINS
Fredericksburg

THE rising tide was inches above the top of the lily pads. In the dark water, the submerged pads were a pale green. An occasional pad still curled on the surface. I cast thirty feet back into the submerged jungle. Tom Bentley's lure splashed down far back in the pads on the opposite side of the creek. Both of us started our retrieves as soon as the lures touched the water. Cranking furiously, we kept the rubber-skirted lures burbling along the surface.

Only the sound of the sputtering lures and the qua-

A Chickahominy largemouth trailing weeds from its lily pad lair.



vering "konk-la-reeee" of a redwing blackbird disturbed the morning quiet. The sun was still climbing above the eastward shore. To the west, back down the curving stream was the Chickahominy River. I forced myself to concentrate on the fishing. An explosive splash behind me signaled that Tom had made first contact.

"He feels like a good one," exclaimed Tom, while he tried to keep the rod tip high. But the bass had established a firm fin-hold in the vegetation. The spinning rod suddenly snapped upright, dejected, with a discarded lure at the end of the 17-pound test mono. Tom glanced wistfully at the stout "worm rod" beside his seat. However, as he had explained, a spinning outfit with a fast retrieve reel makes this fast-paced surface technique a lot easier on the wrist than would a stouter casting rig.

Tom's strike spurred my efforts. After a few more casts, I began to get the "feel" of this style of fishing. We were using a lure aptly named "sputterfuss," a flat-bodied, plastic-skirted lure with a large propeller capable of taxiing across the surface like a Catalina amphibious plane. The best technique was to cast the lure slightly beyond the target, stop the lure's flight, and start it back toward the boat even before it hit the water. This produced a two-fold advantage: the lure hit the water relatively gently and stayed on the surface, thus avoiding the green tangles lurking below. A high rod angle also kept the lure on top.

We eased toward a large cluster of pads, where my first bass of the morning introduced himself. One moment, my yellow sputterfuss was living up to its name alongside protruding grass; the next, the lure disappeared in a foam-muffled boil. My rod wrenched toward the water even before I could set the hook. Recovering from the shock, I set the single hook hard, then hard again, then once more for insurance. That was too much for the largemouth. He hurtled across one pad, performed a quick headstand, and tossed the lure back at the boat.

River bass, I mused while reeling in the rejected lure, are rougher than their lake-dwelling cousins. Finally, Tom subdued one of the creek's berserk bigmouths. After the usual round of stem-wallowing and pad-jumping, the bass struck his colors. While Tom removed the black sputterfuss from the gaping jaws, I noted the dark coloration of the chunky largemouth that is typical of bass in thickly-vegetated, tidal water.



Chickahominy bass taken from shaded lily pad stations are dark and handsome. Baitcasting gear with at least 15 pound line is necessary in thick pad beds.

Except for several tentative swirls at the fast-moving lure, action in the creek ceased. We headed back down to the main river, stopping to pick up a few smaller bass along a long grassy shore line; then turned up the Chickahominy toward a big lily-pad field.

When we reached the right spot, Tom was elated to find conditions perfect. The pads were barely protruding from the water. Two ancient cypresses stood sentinel under the heavy noon sun. We pushed into the vegetation, casting ahead and to the side of the boat. Again, Tom found the fish first.

"Big one!" Tom warned. I didn't need the warning. The sound of the strike was somewhat akin to tossing a twenty-pound anchor overboard. Tom's rod was twisted into a tortured bow. The reel's drag groaned sporadically as the bass ripped line off the spool in ten-foot surges. We never really had a chance. The bass burrowed into a thicket of pad-stems. Before I could get the boat close enough to salvage the situation, the big fish ripped free from the entangled lure.

While Tom recovered his breath, I clinch-knotted a spinnerbait to my 20-pound test line. The spinnerbait was blue-skirted with a large silver blade. I added a black pork-rind lizard to the single hook. The lure looked good in the tea-dark water. My first few casts went unscathed. On my next cast, I retrieved just fast enough to make the blade turn over with a lazy flicker of silver life. The pork rind slithered along behind. When the lure reached a lily pad, I crawled it across the top of the pad, then gently slid it back into the water. I let it sink motionless except for the always-alive pork rind. I saw a gold flash at the same instant that I felt the fish. I clung to the rod, trying to keep the

largemouth's head above the fatal stems. Taking advantage of his mutual shock, I kept him off balance and moving toward the boat. The fight was short and violent, ending with a five-pound bass in the boat.

A five-pound bass is not an unusual fish for the fertile Chickahominy, where eight and nine pounders are taken every year. The river can be a frustrating experience for a bass angler accustomed to the deep, open lake waters. Lily pads, grass, stumps, cypress trees, and the ever-changing tide create a complex environment for the initiate to the Chickahominy.

I make no claims of personal expertise in Chickahominy "bassology." However, those who fish the Chickahominy often and exclusively for largemouth are enthusiastic about this beautiful river. Their favorite lures include Jitterbugs, sputterfusses, plastic worms, and deep-diving Cisco Kids. The Chickahominy is a unique bass spot in that surface action is available even in the sultry days of midsummer. Low tide seems to be the more productive period; however, high tide can produce good "buzzing" action above submerged lily pads.

Given the possibility of outsized bass and the thick vegetation abundant in the river, light tackle is not recommended. "Light" is a relative term, but in the Chickahominy it means anything less than ten-pound test. Fifteen would be an even better minimum.

The Chickahominy may not have the "hawgs" of Gaston or the striped bass bonus of Kerr Reservoir, but it has dawn-tinted mornings where *Micropterus*, the largemouth, prowls the lily pads in search of a fight. Add a chorus of redwings to the wonder of the tide, and you'll realize that fishing goes far beyond the incidental catching of fish.



Raven Haven

By ROBERT G. HOOPER

*Research Wildlife Biologist
Southeastern Forest Experiment Station
Blacksburg*

"**B**ELOW on!" resounded the command from below. Planting my boots firmly and grasping the rope with both hands I yelled, "Belay on!" Charles Dachelet, hanging by rope part way down a vertical cliff, swung over a ledge for a better view.

"Hey! There are only two here. No vacancies either; the nest is packed."

This was all the big black silhouette circling overhead could stand. A steep dive and quick shallow wing beats brought the screaming bird within a few feet of Charles. Though in no danger, Charles ducked reflexively. Ravens are usually shy, especially when humans are near their nest. This was certainly unusual behavior worth capturing on film, but with both hands holding the rope, I had no chance. We have always tried to work

These nestlings will grow to be the world's largest "songbirds."



at nest sites as fast as was safely possible to avoid excessive disturbance to the adult ravens. It was obvious that mama raven was upset and that it was high time for us to leave. The young do not seem to mind an occasional visit from strange beasts such as ourselves.

"O.K., Chuck. One quick nest photo and let's get out of here."

"Got it. Belay off."

Charles rappelled smoothly down the face of the cliff and landed in an unwelcome jungle of rhododendron. If you have ever tried it, you know there is no graceful way to get out of a rhododendron thicket. As I quickly coiled the rope for a fast exit, I wondered if there would be two young ravens flying around the George Washington National Forest next fall imitating the colorful phrases that were coming from the base of the cliff.

Sweating from the warm April sun and our exertions, we met farther down the ridge at a safe distance from the nest. Forty-one days before, on a cold day in early March, we had found the nest which then contained five mottled blue eggs grouped in the security of the warm nest lining. Now we could not tell what had happened to three of the eggs but one thing was clear—there was just enough room on the ledge for the two big nestlings. They were now a good three weeks old, and in another two weeks the young ravens would be soaring over the vastness of Virginia's mountains.

From late February to the end of April we had spent numerous hours searching cliffs with powerful telescopes and had climbed and hiked over miles of steep mountain sides where few trails exist. This nest was one of the eight active raven nests we had located on our 125-square-mile study area. Five hundred hours of searching had failed to reveal any other active nests; however, additional work this spring will verify our results. Our efforts, part of the Forest Service's



Mountaineering skills are often needed to examine nests at close range.

nongame wildlife research program, were directed at learning more about the ecological requirements of this little-studied species. We were especially interested in the types of cliffs ravens require for nesting, how close they will nest to another raven nest, and how much human disturbance they can tolerate.

The raven is found in many parts of the Northern Hemisphere, but its range is only a portion of what it used to be. By and large it has survived in areas remote from humans. In North America the raven was driven from the plains with the passing of the buffalo in the 1870's. The great bird at one time nested along the east coast as far south as North Carolina, but was forced to retreat and has made a successful stand in the Southern Appalachians. Even so, in this century the raven has been driven from the mountains of Alabama and Ken-

tucky. The bird is now found in the mountains from north Georgia to northern Pennsylvania. Based on our research, we tentatively estimate that there may be approximately 3000 breeding pairs of ravens in the Southern Appalachians. Perhaps a third of these are in Virginia.

Is this a lot of ravens? It is difficult to tell and depends upon your viewpoint. Certainly part of the raven's appeal stems from its rarity and the accent it gives to the wild country that it calls home. The ultimate question is, "Can the raven maintain a healthy population in the future as man demands more and more from the Southern Appalachians?" Only time will tell. Why has Virginia remained a haven for the raven, while the species has declined in other areas?

The disappearance of ravens from much of their former range indicates that they are ecologically a sensitive species. Virginia has already lost two important cliff-nesting species—the golden eagle and the peregrine falcon. The raven is doing its part to remain a Virginian. With a better understanding of its ecology, perhaps we can give it a hand if one is ever needed.

Ravens frequently use the same cliffs for nesting year after year, and a large amount of nest material sometimes collects at the base.



YOU CAN JUDGE A FISH BY ITS COVER

By WILLIAM T. BRYSON and
ROBERT T. LACKEY

Photographs by Bryson

EVER catch a prize fish and ask: How old is it? How fast did it grow? Or perhaps a Commission employee has asked to measure your fish and remove a few scales. What could be learned from a tiny scale? Amazingly enough, a single scale can reveal a surprisingly large amount about a fish.

First of all, a scale will reveal the age of a fish, and probably the length at any year of the fish's life. For fish such as salmon that spend part of their lives in fresh water and part in the ocean, the scale will tell how many years the fish spent in fresh water, how many in the ocean, and even when it returned to fresh water to spawn.

How does a scientist determine all these things? Un-

Mr. Bryson, Research Assistant, and Mr. Lackey, Assistant Professor, are with the Department of Fisheries and Wildlife Sciences, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

Maximum Age of Fish

SPECIES	AREA	MAXIMUM AGE
Largemouth Bass	North	14-16
	Central, South	9-12
Smallmouth Bass	North	14-16
	Central, South	9-12
Walleye	North	15-16
	South	10-12
Crappie		4-7
Bluegill		5-8
White Bass		2-5
Brook Trout		19

Length (Inches) of Fish at Various Ages

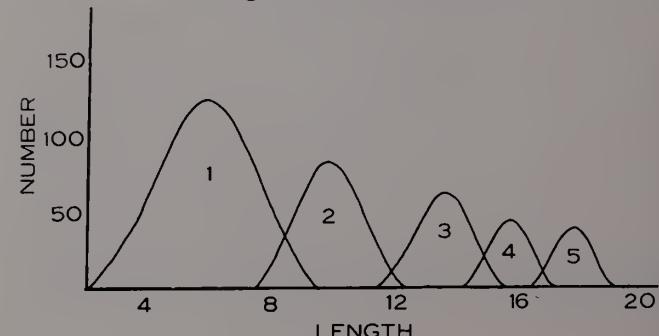
SPECIES	AGE						
	1	2	3	4	5	6	7
Largemouth Bass	2-8	4-12	5-15	7-19	10-21	11-24	12-25
Smallmouth Bass	2-7	5-11	7-14	9-16	11-19	13-21	
Walleye	4-10	9-16	11-20	13-23	15-26	16-28	
Black Crappie	2-5	4-11	6-12	8-13	9-13	11-14	12-15
Bluegill	1-6	3-7	4-8	5-9	5-9	5-9	6-9
White Bass	3-12	6-15	10-17	11-18	15-19	17-19	
Rainbow Trout	2-10	5-16	7-20	9-23	10-28		
Brook Trout	3-7	5-9	5-12	6-14	6-16		
Landlocked Striped Bass	4-9	9-16	14-20	17-23	20-27	24-31	27-35
Channel Catfish	2-6	4-11	6-16	7-18	9-21	10-21	11-24



Commission photo by Kesteloo

like mammals which stop most growth after reaching maturity, fish continue to grow throughout their life. However, being cold-blooded, and having the same temperature as the water, fish become less active in winter when water is colder. As a fish grows, its scales also grow by laying down bony ridges called *circuli*. During periods of slow growth, such as winter, the ridges crowd together. With the onset of rapid growth in spring they are formed farther apart. The boundary area between the close- and wide-spaced ridges is the year mark, or *annulus*. By counting these year marks, the age of the fish is determined.

Typical length-frequency distribution, showing how grouping of lengths denotes age classes.

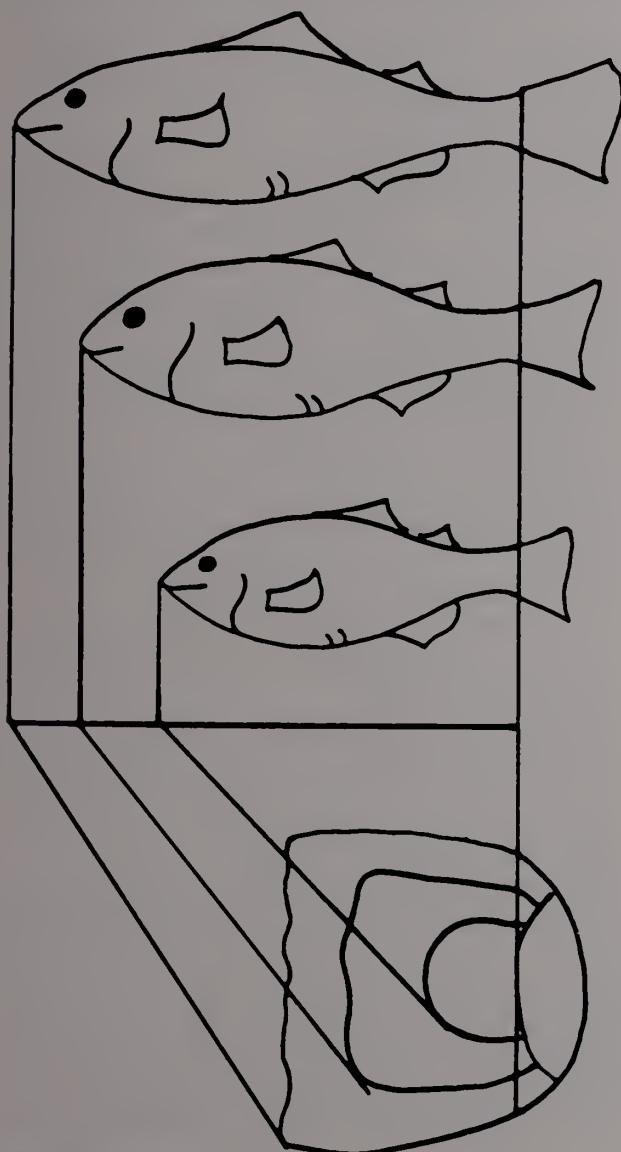


If for some reason the use of scales is not possible, other bony structures, such as otoliths (ear bones), vertebrae, or catfish spines may be used. These structures, like scales, show rings caused by varying growth rate.

Another common method of aging is the length-frequency technique. When a large number of fish are measured, their lengths tend to clump together around certain points. Each of these groups is usually a year class of fish. All three to four inch fish may be yearlings, those five to six inches, two year olds and so on.

Factors affecting the growth of fish are numerous. Changing temperatures vary the length of the growing season, with fish in the South having a longer growing season than those in the North. Food supply is also important. Closely related to this is population density, which increases competition for available food. Various chemical components of the water alter growth rates.

The growth of the scale is proportionate to the growth of the fish, which allows the length at any age to be calculated.

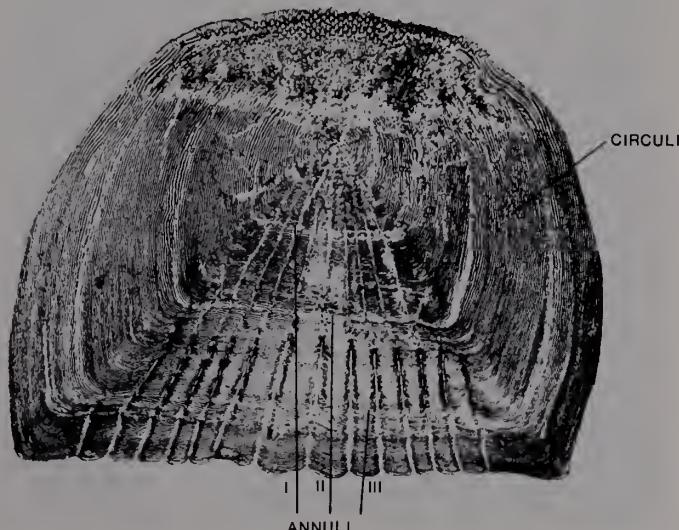


These may be chemicals which directly affect the fish or those chemicals which influence the basic productivity of the water and thus affect the food supply of the fish. The genetic composition of the fish, which produces separate *strains* of the same species, affects growth. The Florida largemouth bass grows faster than other southern largemouths, not only because of the longer growing season, but also because it is a separate strain.

Just how much will a fish grow each year? There are wide variations within a single species. One interesting point concerning growth is that slower-growing individuals tend to live longer than those having rapid growth. Fish having ideal growing conditions grow quickly, but do not live as long as smaller, slower-growing fish of the same species. So your lunker may be a fast-growing youngster rather than an old "mossback." Although fish grow throughout their lives, their growth rate slows in later years.

What is the maximum age for a fish? Fish in captivity will survive longer than wild fish because of better living conditions. Fish that live longest are the sluggish, shallow-water dwellers which can adapt to extreme changes in water conditions, such as carp and sturgeon. The oldest wild fish on record, a sturgeon, was 152 years old, but this age is questionable. In aquaria, sturgeon have reached the age of 69 and carp the age of 38. At the other extreme, a species of goby lives only one year. And then there is the tale of the "Emperor's Pike." Said to have been caught in a lake in Württemberg in the year 1497, the fish had a copper ring around the gill area saying that Emperor Frederick II put the fish in the lake in 1230—267 years before its capture! Adding to the story, this pike was supposedly 19 feet long and weighed 550 pounds. Unfortunately, or perhaps fortunately for the storyteller, today's aging methods weren't available to verify this "overgrown" fish story.

Enlarged photograph of a scale from an eight-inch bluegill showing annuli and circuli.





Den trees are valuable to wildlife. The hollow trunks are frequently used by small animals.

Hiawatha Nature Trail



By BOB BECK
Dry Fork

THE nature trail that joins Banister River about six miles east of Chatham in Pittsylvania County is one of the Old Dominion's newest and most complete foot trails. It came into being last spring when nearly 100 acres of land in the White Oak Mountain Wildlife Management Area were set aside to become the "Hiawatha Nature Trail."

The mile-long trail was designed as a self-guided tour to help the hiker learn more about nature, and to instill in him a sense of responsibility that it's everyone's job to preserve our outdoors heritage. On the trail one feels that he's far away from civilization as he climbs over jagged rock formations and smells the fragrance of mountain laurel and rhododendron blooming on the bluffs overlooking the river. Yet the trail is so well designed that one rarely breathes hard after walking it.

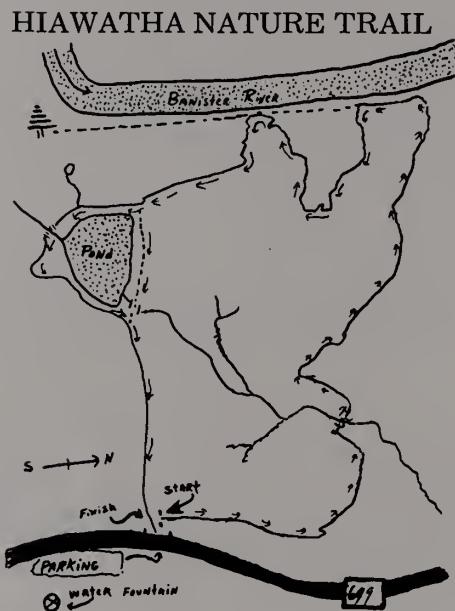
Development of the trail was a combined effort of several agencies working together to provide students and adults of all ages an outdoor laboratory for the study of nature, conservation and science.

As you enter the trail from a parking area across State Route 649, you begin a slow descent down the mountainside to Banister River. The stream here is lazy and meanders slowly along its way to enter Buggs Island Lake at Clarksville. Prior to reaching the river you pass through a beautiful forest of various species of maple, oak and poplar as the trail follows an old roadbed used by early settlers to the Piedmont.

Outcroppings of rocks near post marker three appear to be geological dikes. However, William Hathaway, resource teacher for the Pittsylvania School Board system, says it's really a resident strata of the Dry Fork sandstone and graywacke from the Triassic sedimentary deposits.

Workers have cut away portions of the bank at post four, to expose the soil's profile of weathered rock frag-

White Oak Mountain Wildlife Management Area



Hikers pause along footbridge on trail leading to the river; Christmas fern and mosses grow nearby.



ments, decaying plants, and animal remains in thin layers.

Virtually every species of the oak tree listed east of the Mississippi River can be found along the trail including the "Spanish oak," a name given to the southern red oak by farmers of the area.

The white oak tree dominates the other oaks along the trail with one tree estimated to be 150 to 200 years old, while short-leaf pines grow in profusion.

The dry mountain earth gives way to a spring seepage as we travel down the mountainside and stimulates growth of plants accustomed to moist places.

We soon come upon a meandering mountain stream, which is said to be one of God's most inspirational gifts to man with the blending of shade, water, and rich soils. And perhaps it was a place like this that Henry Wadsworth Longfellow had in mind when he wrote the poem "Song of Hiawatha," for which the trail was named.

"Ye who love the haunts of nature,
"Love the Sunshine of the meadow,
"Love the shadow of the forest,
"Love the wind among the branches,
"And the rain-shower and the snow-storm,
"And the rushing of great rivers,
"Through their palisades of pine trees,
"And the thunder in the mountain . . .

Growing close to the stream are Christmas ferns, mosses and the lichens and fungi that die in dry weather but come to life with each rain-shower.

Many unusual plants and tree formations can be found along the trail such as a sourwood growing out of the stump of a decayed tree and the hop-hornbeam, a tree seldom recognized by the hiker or hunter.

Near the end of the trail we find a fish pond surrounded by a growth of cattails, sedges, alders and some floating plants. The small stream that feeds the pond with its water supply also provides life for a number of frogs, turtles, salamanders, and all sorts of biological life.

The Commission of Game and Inland Fisheries stocks the pond and publishes information as to when fishing is permitted.

Soon after leaving the pond we pass through a new growth of loblolly pines provided by the Soil Conservation Service as an effort to improve the value of the land and subside the erosion of topsoil.

The trail ends where it starts along State Route 649 near the parking area, but the visit wouldn't be complete without a drink of refreshing water from the fountain at the parking area. The water is piped out of the mountain.

It is a desire of the School Board and the Commission of Game and Inland Fisheries that large numbers of people in Pittsylvania County and surrounding counties and cities take advantage of the educational and recreational opportunities provided by this facility.



Post markers designate a number of interesting points along the trail.



The trail follows the Banister River along a fisherman's path.





R is for Raccoon

By VIRGINIA C. HOLMGREN

Portland, Oregon

DO you have trouble remembering how to spell the word *raccoon*?

So did the bold and daring Captain John Smith, the protector of Jamestown Colony in Virginia in 1607. And the captain not only had to remember how to spell this tricky word, he had to figure out how to spell it in the first place—all by himself and without any help from any person or any book. Because on that certain day when he took quill pen in hand to describe this little ring-tailed American in fur, the word *raccoon* had never been spelled or written down before.

It was an Indian name, of course. For the raccoon is a native animal only of the Americas, and neither Captain John Smith nor anyone else from Europe had ever seen or heard of such an animal until the Americas

were discovered. The new colonists at Jamestown could only point and say, "What's that? What do you call that?"

"We call it the *ah-rah-koon-em*," the Indian princess Pocahontas told the captain.

"Ah-rah-koon-em," the redhead captain repeated after her. But back in his cabin, with pen and paper in hand, he was suddenly stumped. Just what was it she'd called it? And how did you write that down in English?

We know that he must have had more than a little trouble with that Algonquin word, because he spelled it a different way almost every time he wrote it down. We still have copies of the books he published about Virginia and New England—the first on sale in London in 1608. In that first book he came up with the spelling *rahaughcums* on page 19 and *ragroughcums* on page 24. In a later book he tried *aroughcun* on page 27 and *rarowcun* on page 48. In still another book he tried *aroughconds*.

Other Virginia colonists had the same difficulty. Look through old books and you'll find the spellings *aroconue*, *aratkhone*, *rackoon*, *rockoon*, *ratton* and several other versions. No one, it seems, published our way until the rather late date of 1672. Even then, the first author to try it—a man named John Josselyn—gave his readers their choice of *raccoon* or *rattoon*.

To make things even more of a mix-up, the settlers in other colonies found that each different Indian tribe had its own name for this ring-tailed mask-wearer with the clever paws. Any one of these other names was just as correct as Algonquin *ah-rah-koon-em*, but the word that Pocahontas had told to Captain John Smith was the first one printed in an English book, and so that was the one that Englishmen agreed to use, both at home and in the American colonies.

The Americans and the English have never agreed on the spelling, however. In England it is entered in the dictionaries as *racoone*—with one "c"—while American rules call for two.

If you have trouble getting it right, just remember this key-letter sentence and you'll never miss again: **Raccoons Are Cute Clever Original Old-time Natives.**

And that's a true statement, too. Raccoons are as cute as teddy-bears, as clever as foxes and as close to being original old-time natives as any animal on the entire continent.

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Virginia C. Holmgren is the author of BIRD WALK THROUGH THE BIBLE (published April 1972 by Seabury Press, N.Y.), THE WAR LORD (Follett, 1969), and other books and has been writing a bird-lore column for the Sunday magazine "Northwest" in Portland's THE OREGONIAN since 1960.

VIRGINIA WILDLIFE



CONSERVATION GRAM

Commission Activities and Late Wildlife News . . . At A Glance

NATURAL AREAS IN VIRGINIA'S STATE FORESTS. State Forester George W. Dean has reserved as natural areas many of the major timber types found on the Piedmont State Forests.

With few exceptions, the natural areas are mature stands. Developments such as roads and trails will not be permitted in those areas. No timber cutting will be permitted and all wildfires will be controlled.

The "Natural Areas" are not intended to be high use recreation areas, but laboratories for those seriously interested in studying ecology, botany, dendrology, biology and other plant and animal sciences.

"We believe in the multiple-use management philosophy," said Dean; "and this new program is another sound environmental use for the forests." A folder with maps and descriptions of these areas is available to school officials, teachers, and persons associated with environmental groups who may want to use the areas for study or observation.

AFRICAN WILDLIFE PRESERVE SLATED FOR ASHLAND AREA. Plans for the establishment of an African Wildlife Preserve 20 miles north of Richmond at the intersection of Interstate 95 and State Route 30 have been announced by Mr. Gary S. Wachs, vice-president of Taft Broadcasting Company. Lion Country Safari will constitute the first stage development of a \$40 million 800-acre family leisure center, named Kings Dominion, which will include a theme park, campground, motel and restaurant accommodations, and major recreational facilities.

Scheduled to open to the public in the spring of 1974, Lion Country will be a 120-acre controlled preserve for African wildlife initially featuring a drive-it-yourself motor tour permitting close viewing of over 100 species. Included will be lions, white rhinos, elephants, zebras, giraffes, ostriches, chimpanzees, cheetahs, hippopotamuses, a large variety of antelope and a number of African birds.

ENGLE APPOINTED COMMISSION LAND COORDINATOR. Mr. James W. Engle of Staunton, Virginia, an employee of the Game Commission since obtaining a master's degree in Wildlife Conservation from VPI in 1949, has been promoted to the newly created position of Game Commission Land Coordinator. In announcing the promotion, Chester F. Phelps, the Commission's Executive Director, stated that, "where in the past Mr. Engle was responsible for land acquisition and forest management for the Commission's Game Division, Engle would now bear these responsibilities for the entire Commission."

ENGINEER EMPLOYED BY COMMISSION. Mr. Edwin C. Taylor of Richmond, Virginia, has been employed as Engineer by the Game Commission to fill an existing vacancy in the engineering section. Mr. Taylor, who holds a Bachelor of Mechanical Engineering degree from the University of Virginia, comes directly to the Game Commission from a project in Calvert Cliffs, Maryland, where he was superintendent of the mechanical phase for construction of the Nuclear Power Generating Plant at that location.



PINTAILS dropping in.

Photographs by Tom's Photo, Annapolis



CANADAS up close.



MALLARDS over a snowy marsh.

Portfolio of Waterfowl

John W. Taylor

Wildlife are familiar with the bird-of-the-month sketches by John W. Taylor, Maryland. Not so well known are his watercolor paintings, executed in watercolor washes. They feature the wildfowl and waterfowl. Here are a few examples.



After the storm—CANADA GEESE.

CANADA GEESE into a snowy cornfield.





Here the author employs a tripod to hold a long telephoto lens. Mounts are needed to support longer lenses.

Text and Photos by STEVE PRICE
Ingram, Texas

YOU'LL get cold, hot, cramped, sleepy, itchy, stung, wet, bitten, sore, mad, bored, hungry, frustrated and maybe even a little scared. You'll slog through boot filling mud and perhaps climb to rocky ledges that would dizzy a mountain goat. You'll wear your shoulder raw carrying pounds and pounds of heavy equipment through all of this, and you'll swear you'll never touch another camera again as long as you live.

But when you know you've captured something really good on film, you'll stay up nights at the corner drugstore waiting for the processed film to come back.

The above isn't exactly a Webster's Dictionary definition of wildlife photography, but if my own experiences are any indication, I can assure you it's at least partly true. And so can many of the nearly five million wildlife photographers roaming the United States today.

Ready Aim Snap!

Sportsmen are adding an entirely new dimension to their outdoor living when they carry a camera afield. They're discovering closed seasons, bag limits, and protected species are nonexistent when they start snapping pictures. They've found the welcome mat is out for them at many of the national parks, wildlife refuges and various state and private game sanctuaries where hunting is often forbidden.

But more importantly, perhaps, they're discovering wildlife photography is just as exciting, often more so, than hunting.

They have to get much closer to the subject being photographed than is necessary with shooting—a feat easier said than done. There is the thrill of a successful stalk or wait, with the satisfaction of knowing that after the "shot" the animal is totally unharmed and free to roam another day.

It's basically easy to become a wildlife photographer. A certain amount of equipment is necessary, of course, but so is a good supply of patience, a willingness to work, and an acceptance of the very true fact that there are also going to be disappointments and discomforts along the way.

For every prized shot of big Canadas flying into that marsh lake, there are going to be hours of chilled fingers

Patient waiting in Back Bay National Wildlife Refuge produced this shot of two Canadian geese. The wings are blurred due to a slow camera shutter speed of 1/250 of a second.



and feet; for that one shot of a trophy buck there will be days spent in tramping through the best deer country in the state without even seeing an antlered head.

Because certain techniques used in wildlife photography are the same as in hunting, many successful gunners also become excellent wildlife photographers.

One of these techniques is stalking. Certain animals can be stalked, and the best way to insure results is to move very slowly, snapping pictures throughout the stalk, so that at least something has been captured on film. Never make sudden moves, and watch for signs of nervousness as you move.

Another method, probably more widely used, is to make blinds. A blind can be anything that hides the photographer from his subject. It should be made to look as natural as possible in its surroundings, and roomy enough for you and your equipment. It's a known fact you can't concentrate on taking pictures if your legs are cramping or your back is bent like a pretzel.

Certainly, one of the prerequisites for wildlife photography is to study the habits of the animal before venturing into the field. This can be done very easily at the local library, and a few minutes spent here can easily save several hours fruitless waiting for, say, a ruffed grouse to start drumming, when it isn't the right time of year or even the right location!

Just before my first trip to Alaska I read several books on that state's game animals and the ones I would find in the region I planned to visit. My study paid off for me, and it will for you, too. You can even study while you're in the field, by taking a pocket guidebook along that fits in your camera bag.

A late evening shot of a doe drinking. Early morning and late afternoon are the best times for wildlife photography.



An eastern goshawk eyes the photographer. A telephoto lens was used and several exposures were made to insure a good picture.

As in hunting, a good portion of successful wildlife photography is done in the early morning and in late afternoon, when most game is actively feeding or moving. This means 3 a.m. breakfasts and cold blinds for the photographer, but consider the alternative: no pictures. Trying for pictures of great blue herons in a North Carolina swamp once, I entered my blind at 5:30 a.m. before dawn and even then I frightened away one of the big birds that had already started feeding.

Because light is often poor during these hours, I prefer to use faster speed films for my work. Faster films (higher rated ASA) are more sensitive to light and do not require as much exposure time as slower films. Faster films are also a favorite because most wildlife photography is done at fast shutter speeds in order to "stop-action." A slow shutter speed will show only the blurred wings of a splashing duck, but a fast speed will



This American egret was shot with a 400-mm telephoto lens, after a long day of waiting in a North Carolina swamp.

actually show individual feathers.

All of these techniques are used in wildlife photography, but perhaps the most important one of all is practice. There just isn't any substitute for getting out and tramping through the brush or waiting silently in a marsh blind. Picture snapping must become a reflex action rather than a completely thought-out process of focus-compose-expose-film advance. This comes with practice, practice and more practice, and can even be started with an unloaded camera in the backyard.

Most professional and amateur photographers agree the 35-mm single lens reflex is the best all-around camera for wildlife shooting. These cameras are tough, small, lightweight, generally accept a variety of lenses, and don't cost much more than a new shotgun.

The reflex models show the photographer exactly what he is going to get in his finished pictures, as opposed to many of the older so-called rangefinder cameras. There are literally dozens of 35-mm reflex cameras on the market today, and the prospective wildlife

photographer has but to choose the one he likes best. With the growing popularity of photography, many of today's 35's are nearly totally automatic and have made picture taking as easy as pushing a button.

One important factor in choosing the camera is the availability of telephoto lenses for it. Wildlife photography demands that the cameraman get closer to his subject than is necessary when hunting. Shots of over a hundred yards or so are not really practical in wildlife photography due to the small image size on the film.

The telephoto lens increases the size of the image on the film, making it seem much closer than it actually is. With a normal lens considered to be 50-mm in length (most closely approximating what the human eye sees), a 500-mm telephoto lens would magnify the subject 10 times.

Choosing the best all-around telephoto lens for wildlife photography is like choosing America's greatest game fish—it's darn near impossible. My favorite is a 400 mm, but one photographer I often work with swears by his 300 mm, and someone else I know thinks a 500 mm is best. When you start choosing, remember the greater the lens magnification, the larger and heavier the lens usually becomes, and, correspondingly, the more expensive it is. Telephotos range from 135 mm to 1200 mm.

When using these long lenses, steadiness becomes a real problem, and a support of some type is needed. This can be a regular tripod, a shoulder mount, or if nothing else is handy, the limb of a tree or face of a boulder. Tripods are relatively inexpensive, but invaluable for successful photography afield.

Rounding out the wildlife cameraman's basic gadget list is the light meter, which is used to obtain correct film exposures. Many of the 35-mm reflex cameras have these exposure meters built into them, and these usually are accurate enough for overall picture scenes. Separate, hand-held meters are also available, and generally speaking they give more accurate spot light readings. For the beginner, however, the camera-contained models are fine, as are some of the less expensive hand-held models that are available in all photographic supply stores.

Regardless of which light meter you choose, or what size telephoto lens you like best, your equipment is only as good as the man using it. And if you follow some of the tips I've given, then I can promise you a new world of adventure is waiting once you try wildlife photography.

You'll develop a new awareness of your surroundings, a keener perception of Mother Nature and her secrets, and a greater appreciation of the great outdoors. There will be good times and bad, but as I said, when you know you've got something really good on film, you'll wait up nights at the corner drugstore waiting for the processed film to come back.



Plucked from a grassy summer field, the leaves of sheep sorrel (often called sour-grass) have a tart and lemony flavor but in raw state should be eaten sparingly. Their potassium oxalate content may be detrimental if consumed in excess.

Let's Cook With Sorrel

By MARJORIE LATHAM MASSELIN
Richmond

IN a slick magazine that I was reading the other day, a mail order seed house up in New Jersey had placed an ad offering packets of *French Sorrel* seed (about 40 seeds to a packet) for 90¢. At that rate a square yard of our lower meadow, properly harvested, should have been worth about a quarter of a million dollars! For that matter, pick any vacant lot at random and you may be able to make enough hard cash to avoid paying income taxes for the rest of your life. This stuff sounds as though it may be more lucrative than "pot."

Nobody who has ever walked barefoot through a grassy field in summer has managed to grow up without having munched a few leaves of Sorrel plucked absent-mindedly in passing. Perhaps you know it better as Sheep Sorrel, or sour grass or dock.

Sour Grass is probably the best and certainly the most common name for the stuff. The flavor is unmistakable—tart and lemony. In late summer or early autumn the plant sports a spiky red seed cluster. Its leaf, characteristic of several plants in the dock family, looks like a narrow green trowel. Wood sorrel, which is equally common, is something else. The leaf tastes rather similar, but it looks like a smooth clover leaf or shamrock. It is also called oxalis. It has a little yellow or sometimes a pink flower, and in general it looks more like a flower than a weed. Sour Grass looks like a weed

and grows like one, but strictly speaking it is an *herb*; a useful herb.

I hate to harp on French cooking, but the fact is that if flora or fauna is in any way edible somewhere in the French cuisine one will find specific instructions for preparing the item. No other people from the beginning of recorded cooking history have shown such enthusiasm for or ingenuity in the preparation of what goes into the stomach, as the French have done. This is not to say that sorrel is not used in the national cuisine elsewhere. Of course it is. But if there is a question in one's mind about where to search out cold facts on any matter of cooking, the best and most logical place to begin is with the nearest French cook or cookbook. The basic recipes will invariably be there. So it is with sorrel.

Basically there are three kinds of herbs—the sweet, the pungent and the bitter. Sorrel is one of the bitter herbs. This tells you at once that its use in the kitchen will be limited. With all herbs, of course, too much of a good thing can be worse than none at all, but this is especially true in the use of the bitter herbs. In olden times, sorrel was primarily thought of in the same way as tansy—as a tonic. That is, its use was more medicinal than culinary. But since pills and capsules are a modern invention, tonics and other remedies tended to be concocted in the kitchen along with the rest of the family meals. Tansy Puddings, Sorrel Soup, Sulphur and Molasses are all pretty much in the same category only the tastes differ. Before we got so civilized that we swallow our vitamins in pills and capsules, we took them naturally in the foods we consumed, and where the bitter herbs were concerned, a disguise of some

(Continued on page 20)

Sour grass leaf looks like a narrow green trowel, a characteristic of some plants in the dock family.



Cooking Sorrel

(Continued from page 19)

sort was definitely in order. This was left to the ingenuity of the cook.

In earlier days—as recently even as Grandmother's era—hardly anyone stood up at a lunch counter and wolfed down a sandwich in the middle of the day. The French still do not. Most Europeans still do not, although they are coming to it. In about forty years or less all of Europe will no doubt have managed to make all the mistakes we here have already made and are now trying to correct. But for the most part, as our grandmothers did, Europeans still sit down to a relaxed mid-day meal and *prepare* their stomachs to receive food. There are two very pleasant ways to do this. One is with a small glass of an apertif, generally a fortified wine which often contains an infusion of *herbs*. No; the martini lunch is *not* the same thing. A second way is to consume a small plate of hot soup. If you have in mind the location of a patch of wild dock, I suggest you try this soon.



Commission photos by Kesteloo

Sorrel Soup

Gather fresh leaves of sorrel—about a cupful snugly packed. Wash them well, and put them in the blender with enough water to make a purée. Add more water to make 1 quart. And in this dissolve 1 packet of instant milk (or as the package directs for making up 1 quart of reconstituted milk). In a two quart copper or other heavy pan, melt 2 tablespoonfuls butter and stir into this 2 tablespoonfuls flour. Cook a minute or two without browning, just to get rid of the raw taste of the flour. Add the herb liquid and cook stirring for about 5 minutes. Taste. Correct the seasoning with salt and *white* pepper and serve hot with a dab of sweet butter melting on top. The main point in this preparation is not to cook it so long that the fresh, green color is lost. Overcooking any fresh green destroys not only its looks and palatability but much of its food value as well.

Not everyone is wild about cream soups, nor are they the ideal way to "prepare" the stomach for more to come, but I started you with the cream soup recipe for

two definite reasons: milk soups are very nutritious and milk has a distinct tendency to mask or modify other flavors. I discovered early in the game that our children were totally uninterested in, as our son described it, ". . . a wad of dead spinach leaves" on the plate. Yet both our children were quite willing to devour a good sized bowl of cream of spinach soup and ask for seconds. There is always the question of what to do with those perfectly nutritious broccoli stalks that no one wants and with the woody parts of asparagus spears, the stems of parsley and watercress and in general the less desirable parts of all green vegetables. They all found their way into cream soups, and Green Soup grew into an old standby in my kitchen.

A clear soup or, more exactly, a semi-clear soup is a much less hearty way to begin a meal and leaves the diner with a greater appetite for what is still to come. To achieve one of these with sorrel, begin with a good rich meat stock. Add the half cup or so of purée of sorrel and even a tablespoonful of pearl barley per quart of stock. Correct the seasonings as in the first recipe and serve very hot.

If you discover that the flavor is a trifle strange and perhaps not wholly to your liking at first, it is perfectly acceptable to use less sorrel or to mask it a bit with flavors that you do enjoy. Add to the purée some parsley, onion, spinach or chard leaves, water cress, chervil, tarragon, *anything*, in fact, which is familiar and liked by the family. Experiment with different flavors such as these, either alone or in combination, until you derive at last a formula that you do like. In the end you will have developed your own unique "Green Soup" to serve at any time the stomach requires pampering.

Another way to start your family on the road to acquiring an educated taste for wild herbs is to use them in stuffings for fish, fowl and meats. Sorrel makes an especially good flavoring for fish, and is much used by the French. Any fish suitable for baking with a stuffing can be used. Any favorite stuffing is similarly acceptable. All you do is to add one or two tablespoonfuls of minced sorrel leaves to the usual stuffing recipe.

Since sorrel has its characteristic tart, lemony taste, it also serves very well as a salad green, though never in great quantities. Just add a small handful of well washed and tender young sorrel leaves to whatever other greens are going into the salad bowl.

Use sorrel, in fact, with the same restraint and imagination that all herbs require. Add a little at first; taste and add a little more until you get the desired result. Always remember that an initial overdose can spoil the whole thing possibly forever. In introducing any new food item to your family, the ideal response toward which you are aiming is that after the first taste some member of the family says, "Hey, this tastes different tonight," immediately takes a larger bite, and then adds, ". . . good, too."

Parasitic Plants

By ELIZABETH MURRAY

Charlottesville

Illustrated by Lucile Walton

SOME flowering plants are lacking in chlorophyll. This is the green pigment which enables most flowering plants to manufacture their own organic food-stuffs from carbon dioxide and water, using energy from the sun, a chemical process known as *photosynthesis*. Plants which are unable to photosynthesize are dependent upon the activities of other living creatures and must obtain their food either from other living plants, when they are called *parasites*, or from dead organic material, when they are called *saprophytes*. Several families of flowering plants contain members which are partially or wholly parasitic or saprophytic.

The broomrape family, or Orobanchaceae, consists entirely of parasitic plants. They have minute, scarcely differentiated seeds which germinate to give tiny thread-like plants. These attach themselves to the roots of suitable host plants and together they form bulbous masses. From these there grow eventually upright flowering stems which are completely devoid of chlorophyll. Some species parasitize only a particular kind of host plant; others are less specialized.

Three members of this family can be commonly found in the Virginia woods in summertime. Broomrape, *Orobanche uniflora*, has a single flower at the tip of each three to nine inch long stem. The stems usually grow several in a group, presumably where they have found a suitable host. The corolla has five equal lobes, united below into a tube. The petals are a pale mauve with two yellow bands inside on the lower side. The flowers are often missed since they are small and deli-

Squawroot (*Conophyllum americana*).



Indian pipe (*Monotropa uniflora*).

cate and grow amongst thick undergrowth, but they are fairly common throughout the wetter woods of the state. They bloom from April through June and are attractive and unusual little flowers.

Another member of the same family, *Epifagus virginiana* or beechdrops, is host-specific. As the name suggests, it grows on the roots of the American beech tree, *Fagus grandifolia*. If *Epifagus* is attached to a smallish beech root, the part of the root beyond the parasite dies. If the root involved is a comparatively large one, then the distal portion continues to live but is obviously unhealthy. The host is thus damaged, though not severely, by the parasite. Beechdrops is a brownish, much-branched plant 6-18" high. The leaves are like small scales, borne singly on the stems. The flowers also occur singly, in the axils of the leaves. The corolla is a slim white tube with purplish-brown stripes. The upper flowers are two-lipped at the tip. The lower flowers do not open but they alone produce fruits, in the form of capsules. As the fruit develops, it wears the unopened corolla for a time on its tip. Beechdrops blooms from August through October and, of course, is found in beechwoods. Their range extends from Quebec to Wisconsin and south to Florida and Louisiana.

Squawroot or Cancer-root, *Conopholis americana*, is a somewhat less attractive member of the broomrape family. The plant consists of several thick, pale brown or yellowish stems 4-10" tall. The stems are covered with scale-like leaves which are at first soft and thick, later becoming dry and hard when the whole plant resembles a small pine cone. The flowers bloom in the axils of the upper leaves. The corolla is about half an inch long, yellowish-cream colored, with a curved tube, the upper lip forming a narrow hood, the lower lip three-lobed. The stamens project beyond the petals. Squawroot blooms from April to July and is found in woods at the base of trees, commonly oaks. It occurs from Nova Scotia west to Wisconsin and south to Florida and Louisiana.

One of the most destructive groups of parasitic plants belongs in the Convolvulaceae or morning glory family. The dodders, species of the genus *Cuscuta*, form little thread-like plantlets which, on attachment to a suitable host, grow rapidly until the original plant is densely entangled in a mass of the orange stems of the parasite. Eventually clusters of white, waxy flowers are produced which have much the same structure, on a small scale, as the morning glory. Some half a dozen species of dodder occur in Virginia. Some are parasitic on clover; others grow on woody plants such as the blackberry.

Perhaps the best known of all of our "non-green" plants is the Indian pipe. It has an extensive range in woods throughout the United States and down into Central America. Indian pipe, *Monotropa uniflora*, is sometimes given its own family, the Monotropaceae, sometimes included with the Pyrolaceae or wintergreen family and sometimes put with the heaths and rhodo-

Broomrape (*Orobanche uniflora*).



dendrons in the Ericaceae. The plant produces clumps of completely white stems which come out of the ground with their heads bent over, looking like old-fashioned clay pipes. They grow 4-10" tall, the leaves represented only by white, waxy scales. The flowers are white, sometimes pinkish, initially hanging over with the open ends downward, but as the fruit develops the stems straighten up so that the flower eventually points up. Because of the white and colorless appearance of these plants, the alternative names of Ghost or Corpse plant seem singularly appropriate. The subterranean portion of the plant is a branching fleshy root system which may absorb organic and mineral material saprophytically from decaying matter in the soil. However, there is also a fungus which lives on the roots and whose presence is necessary for Indian pipe to thrive. So rather than being a complete saprophyte, it may, in fact, obtain its nourishment from this fungus.

A close cousin of the Indian pipe is pine sap or false beechdrops, *Monotropa Hypopithys*. It is also very widespread, flowering in our area throughout the summer. The stem may be tawny, yellow or red, slightly hairy, with several flowers at the tip. Like Indian pipe, the blooms are at first bent over at the tip and gradually straighten up. Pinesap grows in dry woods, mostly associated with the roots of pines and oaks.

Some plants do have green leaves but are also parasites, this condition being known as *hemiparasitic*. In the sandalwood family (Santalaceae) there is a small, herbaceous perennial called the bastard toadflax, *Comandra umbellata*, which is partially parasitic on the roots of oak trees. The plant has narrow, elliptic leaves and small umbels of white flowers. It is chiefly found in the Midwest, but occurs occasionally in mixed, deciduous woods of our region, blooming in early summer. Another hemiparasite of oak tree roots is the downy false foxglove, *Aureolaria virginica*, a member of the Scrophulariaceae. These can be found along the edges of deciduous woods over most of the state in early and midsummer.

The mistletoe, such a feature of our Christmas decorations, is another plant which is parasitic but also possesses green leaves. With its oval, paired leaves and white, sticky, translucent berries, the plant is well known, growing in many different trees, often oaks and persimmons. It sends sucking organs or *haustoria* into the trees to obtain food. The berries adhere to the bills and feet of birds who carry the seeds from tree to tree.

It is almost impossible to transplant any of the parasitic or saprophytic plants, since it is so very difficult to re-create exactly the appropriate host conditions which are necessary for the plants to survive. So (if anyone needs one!) there exists a good incentive for getting out into the woods and searching carefully under leaf litter, and around the bases of trees for examples of this specialized and fascinating form of plant life.

YOUTH AFIELD



Edited by ANN PILCHER



A total listing of scholarship, grand prize, and 100% school winners of the 26th Annual Wildlife Essay Contest includes: Scholarships—Robert F. Bordley, Bishop Ireton High School, Alexandria (honorary); Roberta G. Kurpit, Woodbridge Senior High (\$1000); Dreama M. Plybon, Franklin Co. High (\$400). Grand prizes (\$50) were earned by Virginia E. Carter, Liberty High, Bedford—12th; Steve Munson, Luray High—11th; Janet Silverstein, Thomas Jefferson High, Richmond—10th; Dottie Nelson, Bland High—9th; Craig Howard, Bowling Green Jr. High—8th; Glenn R. Comer, Springfield Elementary, Page Co.—7th; Anne E. Snowden, Saltville Elementary, Smyth Co.—6th; Deborah E. Swansey, Falling Creek Elementary, Chesterfield Co.—5th. School awards (\$15)—Callaghan and Central Elementary Schools, Alleghany Co.; Bland High; Gladesboro Elementary and Vaughan Intermediate, Carroll Co.; Beulah Elementary, Chesterfield Co.; Boyce Elementary, Clarke Co.; Westbriar Elementary,

Game Warden Association President Walter L. Flory presented Robert F. Bordley, honorary scholarship winner, a trophy from the Association for the excellence of his composition. A surprise announcement revealed that Bordley, having earned a large scholarship from an out-of-state university, was unable to accept the top scholarship award in this year's contest.

Following a bus tour and luncheon at Richmond's Bryan Park, famous for its spring azaleas, winners (holding red oak seedlings provided through the generosity of the Virginia Division of Forestry) react to a quip by Contest Coordinator, Game Commission Information Officer F. N. Satterlee. Satterlee planned all phases of the contest, including awards day events.

Awards Day Highlights: 26th Annual Wildlife Essay Contest



School prize of \$15 for 100% student participation is presented by Mr. Rowe to principal Ralph Reynolds of Bland High School.

Scholarship and grand prize winners with the Honorable Maurice B. Rowe, Virginia's Secretary of Commerce and Resources, at the Federal Reserve Bank Building, Richmond, after awards presentations: Virginia Carter, Roberta Kurpit, Steve Munson, Glenn Comer, Deborah Swansey, Craig Howard, Dreama Plybon, Anne Snowden, and Dottie Nelson.

Surprised Roberta Kurpit as she received \$1,000 certificate.



J. Robert Hicks, Chairman, Conservation Committee, Virginia Division, Izaak Walton League of America, addresses winners and guests from the podium in the auditorium of the Federal Reserve Building on Awards Day, April 27. Shown at right are Game Commission Executive Director Chester F. Phelps and Virginia Division IWLA President Samuel P. Mason.



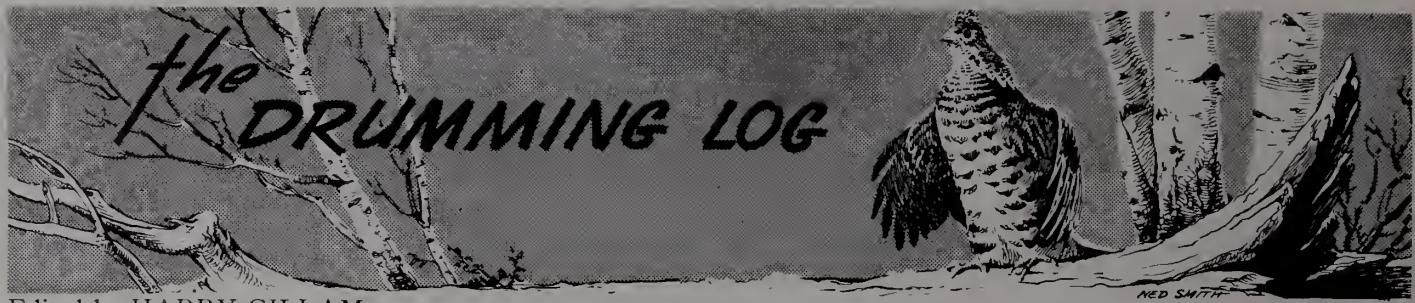
Fairfax Co.; Stonewall Elementary, Frederick Co.; Fairview Elementary, Grayson Co.; Belfield Elementary, Greensville Co.; Jonesville Elementary, Lee Co.; Wilton Elementary, Middlesex Co.; Fort Lewis Elementary, Roanoke Co.; Swords Creek Elementary, Russell Co.; Star of the Sea, Va. Beach; Hayter's Gap Elem. and Holston High, Washington Co.; Sacred Heart, Danville.

Lynn Collins, below left, accepted prize for Hayter's Gap Elementary School in Washington County, Mrs. Thelma Henderson, principal.

Commission photos by Kesteloo

As co-sponsor of the contest with the Game Commission, the Izaak Walton League's Virginia Division provided \$1850 of the \$3600 prize money offered contestants and financed part of the cost of Awards Day activities. For preliminary screening purposes, members of the League's local chapters read the 4,202 essays written this year on "Youth's Role in the Management of Wildlife Resources."





Edited by HARRY GILLAM

Record Culpeper Buck?



Marshall E. Green and hunting companion W. E. Green, III, of Culpeper County exhibit what they think is a record whitetail for the county. The rack has not been officially measured, but it has a 26-inch spread across the main beams.

World Wildlife Fund Backs Conservation Around the Globe

The World Wildlife Fund (U.S.) issued over 50 wildlife conservation grants totaling half a million dollars in 1972. The grants ranged from research and restoration work on various endangered wildlife species to a \$150,000 purchase of land in the vital New Jersey coastal wetlands area.

In announcing the record allocations, the Fund's new Executive Director, William E. Scheele, stressed: "These grants will aid scores of threatened species directly and hundreds more indirectly. But with more than 900 bird, fish and mammal species and 20,000 plant species in danger of extinction, we cannot be content with past achievements. We must set our goals even higher for 1973."

The World Wildlife Fund (U.S.) grants included a study aimed at preserving the last significant U.S. population of gray wolves outside of Alaska and a natural history study of the red wolf.

Funding also was made available to provide for studies to determine the status of the diminishing cougar populations in both Idaho and southeastern United States, blackfooted ferret popu-

lations in the Southwest, and Florida's remnant manatee (sea-cow) populations. In addition, the Fund provided significant financing for a captive breeding program for the peregrine falcon, one of our rarest birds of prey due to harassment and pesticides.

Among the international projects funded by World Wildlife (U.S.) were a breeding program to save the golden lion marmoset of Brazil; a status study of the critically endangered Sumatran rhinoceros in Southeast Asia; anti-poaching and motorized equipment to protect the rare black lechwe and other wildlife in Zambia's Bangweulu Swamps; and three programs to protect the wool-bearing llama-like vicuna of Peru and Bolivia.

Virginia Wilderness Areas Proposed

Legislation has been introduced in Congress to establish three wilderness areas in Virginia (the James River Face in Jefferson National Forest, and Laurel Fork and Ramsey's Draft in the George Washington) and three in Monongahela National Forest in West Virginia (Cranberry, Otter Creek and Dolly Sods). In addition, Rep. John Saylor (R-Pa.) has introduced the Wilderness Study Act providing for a study of wilderness potential of three areas in Jefferson National Forest: Mountain Lake, Mill Creek and Peters Mountain.

Pennsylvania Hunter's Trophies



C. Donald Harnish of Willow Street, Pa., supplied this picture of two hunting trophies bagged from the George Washington National Forest.

Chester Phelps Trophy Presented



Brumfield Studio photo

Game Warden J. Anderson Tramel congratulates Dan River High School junior Michael Keith Guill of Ringgold, winner of the 1972-73 Pittsylvania County FFA Wildlife Feed Patch award. The Chester Phelps trophy, named in honor of the Game Commission's Executive Director, was contributed by the Danville Pittsylvania Academy of Medicine. Game Commissioner from the Fifth Congressional District Dr. Allan A. Hoffman, urologist and Chief of the Artificial Kidney Service at Danville Memorial Hospital, assisted with the presentation.

"GOOD SAM" Camping Directory

The 1973 edition of the Good Sam Recreational Vehicle Owners Directory contains nearly 1000 pages of information for recreational vehicle owners, including a state-by-state listing of campsites, dumping stations, LP-gas refill stations and RV service centers plus a wealth of other needed information. The directory lists more than 13,000 public and private campgrounds in the United States, Canada and Mexico. In addition there are approximately 20,000 listings of LP-gas stations, service center dealers, disposal stations, supply and accessory stores and service stations, plus a how-to-do-it feature section, making this one of the most complete guides available to the recreational vehicle user. These guides will be used by the more than 70,000 member families of the Good Sam Recreational Vehicle Owners Club, as well as other outdoor enthusiasts as they travel this season.

Know Your WARDENS

Text and Photos by F. N. SATTERLEE

Information Officer



DOUGLAS E. BLOSSER
Buckingham County Warden

Douglas E. Blosser grew up at the foot of the mountain known as Massanutton where he roamed the rural area hunting on the slopes and fishing in the Shenandoah River. His father was an avid fisherman and hunter, and he passed his knowledge and love of the outdoors to his son.

Following graduation from New Market High School, Doug enlisted in the U.S. Army. He served in the 82nd Airborne Infantry Division as paratrooper for three years during which time he made 30 jumps. After his discharge from the Army he worked at a variety of jobs but none of them suited him. In the fall of 1968 he learned that the Game Commission was recruiting wardens, applied, was accepted and was assigned to duty in the Buckingham County area.

Mr. Blosser was honored in January of this year when he received the "Outstanding Law Enforcement Officer" award for 1972-73 presented to him by the Buckingham County Jaycees. He enjoys being a warden as it enables him to work with people helping them to understand wildlife and at the same time to work out-of-doors in tune with nature.

Doug is married to the former Janet Ann Shenk of Luray, Va. They have two sons and live in Dillwyn, Va.

LEWIS W. BRANDT
Area Leader Warden

A Richmonder by birth, Lewis Brandt attended John Marshall High School in that city. He spent considerable time with his father hunting and fishing and learning about the outdoors and wildlife during his growing-up years.

Lewis attended Randolph-Macon College in Ashland, Va., where he majored in religion and obtained a B.A. degree. Following graduation he spent three years in an Episcopal Seminary in Pennsylvania and then was assigned to the Methodist Church in Cumberland County, Va. In this assignment he served six churches in a circuit or "charge" as the area was designated.

It was during this period that a long latent and deep feeling for the outdoors caused him to apply for a vacancy with the Game Commission as a warden. He was accepted in 1962 and was assigned for a short time to Shenandoah County, then shifted to Albemarle County.

In 1973 he was promoted to his present position of Area Leader with responsibilities for the activities in the counties of Chesterfield, Henrico, New Kent and Charles City.

"Preacher," as his close friends call him, feels that he is, in his work as a warden and area leader, contributing to his fellow man. He feels also that his desire to closely associate with nature, wildlife and people has been fulfilled.

Mr. Brandt's wife is the former Ann Gail Jones from Cumberland, Va. They have three children and make their home in Chesterfield County.



ON THE WATERFRONT



Edited by JIM KERRICK



Photo courtesy Mercury Marine

Bass boats and large offshore fishing rigs continue to gain in popularity judging from manufacturers' exhibits at boat shows across the country. But family boating in versatile rigs like this sporty 13-footer is still a mainstay of the outdoor recreation scene. Powered by a 20-hp outboard, this outfit can zip right along at 25-28 mph, or throttle down to troll for neighborhood lunkers.

Powerboat Popularity Zooming

How many times have you dreamed of owning a flashy sports car trimmed in chrome, five (not four) on the floor, with the hottest engine going?

And how many times has that dream been shattered when someone calmly reminds you, "Oh, that will only cost you a cool \$7,000." Ouch!

With a slight change in your dream pattern, you can own something quite similar to that road-grabbing two-seater and for a lot less. The alternative is boating's answer to the hot car—the powerboat.

Powerboats are the most popular craft among boaters today. Outboard and stern drive utility boats are number one with today's boating enthusiasts.

These quick-moving craft were once considered added tinsel to a tycoon's collection of sport coupes, yachts, horses, stylish clothes and beautiful women. One primary reason was in the early days of the boating indus-

try wood was the major building material. Add the time a skilled craftsman spent building a boat, and the final price was within only a wealthy man's means.

The man on the street didn't have the dough to dish out for a boat.

But the fiberglass revolution, which began in the late 1940's, has now taken over firm control of the boating industry. The result is more and more boats being built in larger volume, cutting costs and enabling more people to purchase what used to be just a backyard daydream.

Today there are close to 9,000,000 boat owners in this country, and more than 44,000,000 persons went boating more than once last year.

The powerboat is by far the most popular boat on the water. A total of 5,135,000 are zipping along our waterways. They range in all sizes and styles from sporty runabouts to small cabin cruisers, 12 feet to more than 20 in length, speed to burn, full of excite-

ment and maneuverable in most waters.

People, as always, are concerned with costs. The price of an outboard runs the gamut of the price list. Starting at about \$1,800 for a sporty 14-footer with outboard power and all the comforts including carpeting, cushion seats, stylish hull designs and modern bright color combinations, to \$5,000 for one with I/O (stern drive) power, small cabin, and all the trimmings to suit almost any man.

The versatility of the powerboat is its most popular feature. It can pull a water skier across a lake, take skin divers to new adventurous waterways, find campsites along distant shores, and often provide overnight accommodations.

Power is supplied by heavy duty, highly efficient engines. Beginning with a little two hp engine for auxiliary power on sailboats, small dinghies, inflatable boats and canoes up to 140 hp for the larger outboard craft, these engines also are non-pollutant. New recycling devices have been installed in all models, eliminating emission of gas and oil into the water.

Prices start at less than \$300 for the two hp unit to more than \$1,500 for the top hp models.

The small cabin cruisers usually are equipped with either stern drive or straight inboard power and have all the comforts of home added to all the charm and thrills a boat naturally possesses. Galley facilities, spacious sleeping berths, less maintenance due to fiberglass construction, and plush, colorful interiors are major features.

These cruisers have become second cars for many families, a second home for others. Either way, they enable the great escape each weekend. Family vacations by water are becoming as much an everyday occurrence as eating bacon and eggs.

The new awareness is reaching out to the water.

*Bird
of
the
Month:*

By JOHN W. TAYLOR
Edgewater, Maryland



Royal Tern

LIKE many species with Caribbean affinities, the royal tern finds its northern limits on the Virginia coast. (Actually there are breeding colonies up the coast a bit in Maryland, but all the books say "from Virginia south. . . .") It is very sensitive to water temperatures, a factor largely determining its range and movements, as well as its nesting grounds. Variance in water temperatures may even explain why this tern suddenly abandons particular nesting islands, or uses them only sporadically.

There is probably another explanation for its curious disappearance from Virginia shores early in the century. In the 1880's it was abundant, nesting by the thousands on the Eastern Shore's barrier islands. Then it apparently disappeared from these areas (or possibly chose less accessible nesting sites) only to return early in the thirties, until now it is again a common breeder with us.

Nesting colonies, some of them quite large, are scattered up the coast from Fisherman's Island, off Cape Charles, to near South Point in Maryland. Many of the birds hatched here have been banded, and returns indicate that, like other terns, the royal is a great traveler. Virginia banded birds have been recovered on all the major islands in the Caribbean, and on the east coast of South America clear down to Argentina. A western population breeds on the Pacific coast of Mexico, wintering south to Peru.

Atlantic royals seldom winter north of the Gulf States,

beginning their trek north in April. A few birds reach the Carolinas by mid-month, but it is May before they are well distributed on their Virginia breeding grounds. Banding recoveries show evidence that first-year birds do not return north to breed, and some individuals may possibly not nest until their third year.

The royal tern can be confused only with the slightly larger Caspian tern. Both are large (about 20 inches), have crests and are similarly patterned: white below and pearly gray above. The tail of the royal tern is prominently forked, while that of the Caspian is only slightly indented. Too, the Caspian shows darker under the outer wing than does the royal, a useful feature when the bird is in flight. At rest, the best field mark is the forehead; usually clear white in the royal, streaked in the Caspian. (For a brief period in early summer the forehead of both species is completely black.) If by chance the two are seen together, the bill of the Caspian appears redder than the more orange colored bill of the royal, but this character is not obvious except by comparison.

Keep in mind that the royal is a bird of southern sea coasts and salt water; the Caspian occurs as a migrant throughout the East and Midwest, nesting principally on inland freshwater lakes. But the situation is not quite that clear-cut. The Caspian has reportedly bred on the Virginia coast, and, almost incredibly, the royal tern has been identified inland at Charlottesville, Lynchburg and Blacksburg.

It's Unlawful to keep Wildlife in Captivity

Wildlife is the property of the State, and may be kept in personal possession only during established seasons, and then only when taken by lawful means. This applies to capturing and keeping alive as well as killing. It is illegal, therefore, to possess wild birds and game animals, *dead or alive*, except during authorized seasons, and in any event wildlife protected by closed seasons may not be kept in captivity. Species protected by closed seasons include bear, deer, fox, rabbit, squirrel, beaver, mink, muskrat, opossum, otter, raccoon, and all native wild birds except crows, buzzards and jays.



Bear cubs are frequently involved in illegal possession cases.

Fawns should be left in the woods—they're safer there, and it's *unlawful* to capture or confine them.



GRAY SQUIRREL



COTTONTAIL



RACCOON

Although game species, none of the above mammals may be legally kept in captivity.